

A preferred vector for the insertion of the modified sequences, pBJ1Neo with a polylinker insertion site is shown in Figure 8. The host vector, pBJ1Neo is described in *Mol. Cell Biol.* (1988) 8: 466; the polylinker is described in *Science* (1990) 249: 677.

**IN THE CLAIMS:**

Kindly amend claims 6-9, 11 and 13-14 as follows.

6. (Amended) An isolated nucleic acid molecule which comprises a nucleotide sequence encoding a variable region of a non-human TCR  $\alpha$  or  $\beta$  peptide wherein said TCR is human HLA-restricted and specific for a tumor-associated antigen, the variable region of the non-human TCR  $\alpha$  or  $\beta$  peptide being directly coupled to a transmembrane and cytoplasmic region of a CD3, CD8 or CD16 receptor.

7. (Amended) The nucleic acid molecule of claim 6 wherein the transmembrane and cytoplasmic region is the  $\zeta$  region of CD3.

8. (Amended) The nucleic acid molecule of claim 7 wherein said  $\zeta$  region is that of human CD3.

9. (Amended) The nucleic acid molecule of claim 6 wherein said non-human TCR is murine.

11. (Amended) The nucleic acid molecule of claim 10 wherein said single-chain TCR consists of the variable α region fused to variable β region by a flexible linker and said β region is fused to a transmembrane and cytoplasmic region of a CD3, CD8 or CD16 receptor.

13. (Amended) The nucleic acid molecule of claim 11 wherein said receptor region is ζ of CD3.

14. (Amended) The nucleic acid molecule of claim 13 wherein the chain is derived from human CD3.

Please add the following new claims 22-31.

22. (New) The isolated nucleic acid molecule of claim 6, wherein the tumor-associated antigen is Her2/neu, ras, p53, tyrosinase, MART, Gp100, MAGE, BAGE, or MUC-1.

23. (New) The isolated nucleic acid molecule of claim 6, wherein the encoded non-human TCR is restricted to HLA A1, A2, A3 or B7.

24. (New) The isolated nucleic acid molecule of claim 6, wherein the encoded TCR comprises covalently linked in sequence: 1) a non-human TCR α or β peptide; and 2) a transmembrane and cytoplasmic region of a CD3 receptor as shown between nucleotide numbers 927 to 1334 of Figure 3A-B.

25. (New) The isolated nucleic acid molecule of claim 10, wherein the encoded single-chain TCR comprises covalently linked in sequence: 1) a non-human TCR  $\alpha$  peptide; 2) a flexible linker; 3) a non-human TCR  $\beta$  peptide; and 4) a transmembrane and cytoplasmic region of a CD3 receptor as shown between nucleotide numbers 927 to 1334 of Figure 3A-B.

26. (New) The isolated nucleic acid molecule of claim 24 or 25 further comprising a CD8 hinge as shown between nucleotide numbers 786 to 914 of Figure 3A-B.

27. (New) The isolated nucleic acid molecule of claim 26, wherein the CD8 hinge is directly coupled between the non-human  $\beta$  peptide and the transmembrane and cytoplasmic region of the CD3 receptor.

28. (New) The isolated nucleic acid of claim 6, wherein the CD3, CD8 or CD16 receptor is human.

29. (New) An expression vector comprising the isolated nucleic acid of claim 6.

30. (New) The expression vector of claim 28 further comprising sequence encoding a leader sequence.